

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045

Tel: (314)298-8566

TestAmerica Job ID: 160-18646-2

Client Project/Site: ORNL Y-12 Outfall 200 Characterization

For:

Alliant Corporation

320 N Cedar Bluff Road

Suite 200

Knoxville, Tennessee 37923

Attn: Doug Milloway

Authorized for release by:

9/12/2016 2:48:31 PM

Erika Gish, Project Manager II

(314)298-8566

erika.gish@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Job ID: 160-18646-2

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Alliant Corporation

Project: ORNL Y-12 Outfall 200 Characterization

Report Number: 160-18646-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

The following clean-up methods for Organic analyses may have been used on the samples in this data set. Specific methods employed are documented on the batch extraction logs:

Method 3600C: Cleanup

Method 3620C: Florisil Cleanup

Method 3630C: Silica Gel Cleanup

Method 3640A: Gel-Permeation Cleanup

Method 3650B: Acid-Base Partition Cleanup

Method 3660B: Sulfur Cleanup

Method 3665A: Sulfuric Acid/Permanganate Cleanup

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Job ID: 160-18646-2 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

RECEIPT

The samples were received on 8/16/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 08/24/2016 and analyzed on 09/02/2016.

The following samples required a copper clean-up to reduce matrix interferences caused by sulfur: YMTFA53EJ (160-18646-7), YMTFA52EJ (160-18646-8), (LCS 160-266347/2-A) and (MB 160-266347/1-A).

Surrogate recovery for the following samples were outside control limits: YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Internal standard (ISTD) response for the following samples exceeded the control limit on the primary column: YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8). As such, the sample results associated with this ISTD were reported from the other column, which met ISTD acceptance criteria.

The internal standard eluted outside the retention time window for the following samples: YMTFA53EJ (160-18646-7), YMTFA52EJ (160-18646-8), (CCV 160-267639/49), (CCV 160-267639/50) and (ICV 160-267639/14). This retention time shift was taken into account when reviewing the samples for target compounds.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)

Samples YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/23/2016 and analyzed on 08/25/2016.

The following sample(s) was diluted due to the nature of the sample matrix. Samples are high in salts: YMTFA53EJ (160-18646-7), YMTFA52EJ (160-18646-8), (160-18646-A-7-C MS ^), (160-18646-A-7-D MSD) and (160-18646-A-7-B SD ^). Elevated reporting limits (RLs) are provided.

The matrix spike / matrix spike duplicate (MS/MSD) recovery and/or precision for Barium, Cadmium, and Lead was outside control limits, indicating a matrix interference. The sample was a non-homogeneous mixture of soil. The LCS was within acceptable limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY

Samples YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 08/25/2016 and analyzed on 08/26/2016.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

TOTAL STRONTIUM (GFPC)

Samples YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8) were analyzed for Total Strontium (GFPC) in accordance with DOE. The samples were prepared on 08/25/2016 and analyzed on 08/31/2016.

The samples became tarry/sticky on heating. They can not be ground or pulverized per the standard procedure. The samples were processed "as received".

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TECHNETIUM-99 (LSC)

Samples YMTFA53EJ (160-18646-7) and YMTFA52EJ (160-18646-8) were analyzed for Technetium-99 (LSC) in accordance with TC_02_RC. The samples were prepared on 08/23/2016 and analyzed on 08/27/2016.

Case Narrative

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Job ID: 160-18646-2 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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TestAmerica St. Louis

13715 Rider Trail North
Earth City, MO 63045
Phone (314) 298-8556 Fax (314) 298-8757

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sample # 9165-200-7575	Lab P/N: Gish, Erika K	Carrier Tracking No(s): B1003/Q2 5412	COC No.: 160-4416-21712
Company: Alliant Corporation		Phone: 5165-200-7575	E-Mail: erika.gish@testamericainc.com	Page: Page 2 of 4	Page: Page 2 of 4

Analysis Requested					
<input checked="" type="checkbox"/> Total Number of containers PCB Metal Analysis Total Chloride Lead-Dimethyl <input type="checkbox"/> Total Asbestos PCB Metal Analysis <input type="checkbox"/> Total Lead					
Preservation Codes:					
A - HCl B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na204S Q - Na2503 R - Na23203 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:					
<input checked="" type="checkbox"/> Total Number of containers Total PCB Metal Analysis <input type="checkbox"/> Lead-Dimethyl <input type="checkbox"/> Total Asbestos PCB Metal Analysis <input type="checkbox"/> Total Lead					
Special Instructions/Note:					
6010C, 7470A 8270D - TCLP BNAs 8082A - PCBs 6010C, 7470A 8151A - TCLP Herbicides 8260C - TCLP VOC GA_01_Ra - Gamma - Radium-226/228 A_01_Fr - Am-Cm, Am-Tr-Np, Am-101R_Pu, Am-101R_Tm, Am-101R_U SR_03_Rg_Tot_Sr, Sr_02_Rc C_01_1, DOE_H3_4a_RC Perform MSD/MSD (Yes or No) Field Filtered Sample (Yes or No)					
Project #: 1600502 SSOW#: Project Name: ORNL Y-12 Outfall 200 Characterization Site:					
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=oil, B=tissue, A=air)	Preservation Code:
YMTFA5AC	08-15-16	1405	C	S	<input checked="" type="checkbox"/>
YMTFA5BC	08-15-16	1455	C	S	<input checked="" type="checkbox"/>
YMTFA5BC	08-15-16	1423	C	S	<input checked="" type="checkbox"/>
YMTFA5C	08-15-16	1428	C	S	<input checked="" type="checkbox"/>
YMTFA5C	08-15-16	1438	C	S	<input checked="" type="checkbox"/>
YMTFA5C	08-15-16	1445	C	S	<input checked="" type="checkbox"/>
YMTFA5C	08-15-16	1513	C	S	<input checked="" type="checkbox"/>
YMTFA5C	08-15-16	1534	C	S	<input checked="" type="checkbox"/>

160-18646 Chain of Custody
 Sample
 Return To Client
 Disposal By Lab
 Archive For Months

160-18646 Chain of Custody



Possible Hazard Identification		Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Received by:	Date/Time:	Received by:	Date/Time:	Received by:
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological
Relinquished by: <i>Johnny Williams</i>	Date/Time: 08-16-16 10:45	Company	Received by: Johnny Williams	Date/Time: 08-16-16 09:00	Company
Relinquished by: Date/Time:			Received by: Date/Time:		

Custody Seals Intact: Yes No
 Cooler Temperature(s): °C and Other Remarks:

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Login Sample Receipt Checklist

Client: Alliant Corporation

Job Number: 160-18646-2

Login Number: 18646

List Source: TestAmerica St. Louis

List Number: 1

Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
S	Surrogate is outside control limits
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.
*	MS/MSD RPD exceeded the control limit
N	MS, MSD: Spike recovery is outside acceptance limits.

Rad

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
7471B	Mercury (CVAA)	SW846	TAL SL
SR-03-RC	Total Beta Strontium (GFPC)	DOE	TAL SL
TC-02-RC	Technetium-99 (LSC)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-18646-7	YMTFA53EJ	Solid	08/15/16 15:13	08/16/16 09:20
160-18646-8	YMTFA52EJ	Solid	08/15/16 15:37	08/16/16 09:20

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TestAmerica St. Louis

Detection Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Client Sample ID: YMTFA53EJ

Lab Sample ID: 160-18646-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	0.053	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Polychlorinated biphenyls, Total	0.053	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Arsenic	3.9	J	4.7	1.2	mg/Kg	5		6010C	Total/NA
Barium	24		24	7.1	mg/Kg	5		6010C	Total/NA
Cadmium	13		2.4	0.71	mg/Kg	5		6010C	Total/NA
Chromium	20		4.7	1.2	mg/Kg	5		6010C	Total/NA
Lead	41		4.7	1.2	mg/Kg	5		6010C	Total/NA
Mercury	1.4		0.032	0.011	mg/Kg	1		7471B	Total/NA

Client Sample ID: YMTFA52EJ

Lab Sample ID: 160-18646-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1260	0.61	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Polychlorinated biphenyls, Total	0.61	J	0.033	0.0080	mg/Kg	1		8082A	Total/NA
Silver	2.1	J	4.4	1.1	mg/Kg	5		6010C	Total/NA
Arsenic	4.1	J	4.4	1.1	mg/Kg	5		6010C	Total/NA
Barium	84		22	6.5	mg/Kg	5		6010C	Total/NA
Cadmium	16		2.2	0.65	mg/Kg	5		6010C	Total/NA
Chromium	55		4.4	1.1	mg/Kg	5		6010C	Total/NA
Lead	180		4.4	1.1	mg/Kg	5		6010C	Total/NA
Mercury	0.87		0.029	0.0098	mg/Kg	1		7471B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Client Sample ID: YMTFA53EJ

Lab Sample ID: 160-18646-7

Matrix: Solid

Date Collected: 08/15/16 15:13

Date Received: 08/16/16 09:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.033	0.0095	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1221	0.0095	U	0.033	0.0095	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1232	0.0095	U	0.033	0.0095	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1242	0.0095	U	0.033	0.0095	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1248	0.0095	U	0.033	0.0095	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1260	0.053	J	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
Polychlorinated biphenyls, Total	0.053	J	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:28	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	193	J S		23 - 146			08/24/16 10:11	09/02/16 09:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	1.2	U	4.7	1.2	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Arsenic	3.9	J	4.7	1.2	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Barium	24		24	7.1	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Cadmium	13		2.4	0.71	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Chromium	20		4.7	1.2	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Lead	41		4.7	1.2	mg/Kg		08/23/16 08:00	08/25/16 16:33	5
Selenium	1.2	U	7.1	1.2	mg/Kg		08/23/16 08:00	08/25/16 16:33	5

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.4		0.032	0.011	mg/Kg		08/25/16 10:44	08/26/16 12:59	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Strontium 89/90	0.0524	U	0.100	0.100	3.00	0.172	pCi/g	08/25/16 18:10	08/31/16 07:20	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	85.0			40 - 110				08/25/16 18:10	08/31/16 07:20	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			(2σ+/-)	(2σ+/-)						
Technetium-99	0.0118	U	0.256	0.256	1.00	0.442	pCi/g	08/23/16 10:56	08/27/16 06:36	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	89.3			30 - 110				08/23/16 10:56	08/27/16 06:36	1

TestAmerica St. Louis

Client Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Client Sample ID: YMTFA52EJ

Lab Sample ID: 160-18646-8

Date Collected: 08/15/16 15:37

Matrix: Solid

Date Received: 08/16/16 09:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1260	0.61	J	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
Polychlorinated biphenyls, Total	0.61	J	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 09:51	1
Surrogate	%Recovery	Qualifier		Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Sur)	167	J S		23 - 146			08/24/16 10:11	09/02/16 09:51	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	2.1	J	4.4	1.1	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Arsenic	4.1	J	4.4	1.1	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Barium	84		22	6.5	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Cadmium	16		2.2	0.65	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Chromium	55		4.4	1.1	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Lead	180		4.4	1.1	mg/Kg		08/23/16 08:00	08/25/16 16:51	5
Selenium	1.1	U	6.5	1.1	mg/Kg		08/23/16 08:00	08/25/16 16:51	5

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.87		0.029	0.0098	mg/Kg		08/25/16 10:44	08/26/16 13:02	1

Method: SR-03-RC - Total Beta Strontium (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Strontium 89/90	0.0386	U	0.124	0.124	3.00	0.216	pCi/g	08/25/16 18:10	08/31/16 07:20	1
Carrier	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	77.3			40 - 110				08/25/16 18:10	08/31/16 07:20	1

Method: TC-02-RC - Technetium-99 (LSC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Technetium-99	-0.253	U	0.229	0.230	1.00	0.434	pCi/g	08/23/16 10:56	08/27/16 07:07	1
Tracer	%Yield	Qualifier		Limits				Prepared	Analyzed	Dil Fac
Tc-99m	106			30 - 110				08/23/16 10:56	08/27/16 07:07	1

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 160-266347/1-A

Matrix: Solid

Analysis Batch: 266473

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266347

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	08/25/16 22:50	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	08/25/16 22:50	1

MB MB

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
DCB Decachlorobiphenyl (Surrogate)	79		23 - 146			08/24/16 10:11	08/25/16 22:50	1

Lab Sample ID: MB 160-266347/1-A

Matrix: Solid

Analysis Batch: 267639

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266347

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1221	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1232	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1242	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1248	0.0096	U	0.033	0.0096	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1254	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1260	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1262	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
PCB-1268	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 07:58	1
Polychlorinated biphenyls, Total	0.0080	U	0.033	0.0080	mg/Kg		08/24/16 10:11	09/02/16 07:58	1

MB MB

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
DCB Decachlorobiphenyl (Surrogate)	79		23 - 146			08/24/16 10:11	09/02/16 07:58	1

Lab Sample ID: LCS 160-266347/2-A

Matrix: Solid

Analysis Batch: 266473

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266347

Analyte	Spike Added	LCS			D	%Rec	Limits
		Result	Qualifier	Unit			
PCB-1016	0.167	0.129		mg/Kg		78	52 - 134
PCB-1260	0.167	0.119		mg/Kg		71	50 - 132
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
DCB Decachlorobiphenyl (Surrogate)	74		23 - 146				

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 160-266347/2-A

Matrix: Solid

Analysis Batch: 267639

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266347

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
PCB-1016	0.167	0.121		mg/Kg	73	52 - 134	
PCB-1260	0.167	0.121		mg/Kg	73	50 - 132	
Surrogate	%Recovery	LCS Qualifier	Limits				Limits
DCB Decachlorobiphenyl (Surr)	74		23 - 146				

Lab Sample ID: 160-18632-A-1-K MS

Matrix: Solid

Analysis Batch: 266473

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 266347

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
PCB-1016	0.0096	U	0.166	0.155		mg/Kg	93	23 - 140	
PCB-1260	0.0080	U	0.166	0.157		mg/Kg	94	20 - 131	
Surrogate	%Recovery	MS Qualifier	Limits						Limits
DCB Decachlorobiphenyl (Surr)	94		23 - 146						

Lab Sample ID: 160-18632-A-1-L MSD

Matrix: Solid

Analysis Batch: 266473

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 266347

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD	
PCB-1016	0.0096	U	0.166	0.151		mg/Kg	91	23 - 140		2	30
PCB-1260	0.0080	U	0.166	0.148		mg/Kg	89	20 - 131		6	30
Surrogate	%Recovery	MSD Qualifier	Limits						Limits	RPD	Limit
DCB Decachlorobiphenyl (Surr)	88		23 - 146								

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-265985/1-A

Matrix: Solid

Analysis Batch: 266740

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 265985

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.24	U	0.96	0.24	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Arsenic	0.24	U	0.96	0.24	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Barium	1.4	U	4.8	1.4	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Cadmium	0.14	U	0.48	0.14	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Chromium	0.24	U	0.96	0.24	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Lead	0.24	U	0.96	0.24	mg/Kg	08/23/16 08:00	08/25/16 16:24		1
Selenium	0.24	U	1.4	0.24	mg/Kg	08/23/16 08:00	08/25/16 16:24		1

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 160-265985/2-A

Matrix: Solid

Analysis Batch: 266740

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 265985

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits	%Rec.
Silver	41.8	35.5		mg/Kg		84.9	66.3 - 134.	
Arsenic	114	102		mg/Kg		89.6	70.0 - 141.	0
Barium	181	163		mg/Kg		90.3	72.9 - 127.	2
Cadmium	93.2	85.1		mg/Kg		91.3	73.3 - 126.	1
Chromium	109	100		mg/Kg		92.0	69.5 - 130.	6
Lead	102	106		mg/Kg		104.4	70.8 - 128.	3
Selenium	186	164		mg/Kg		88.2	68.3 - 131.	4
								7

Lab Sample ID: 160-18646-7 MS

Matrix: Solid

Analysis Batch: 266740

Client Sample ID: YMTFA53EJ

Prep Type: Total/NA

Prep Batch: 265985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Silver	1.2	U	17.7	19.0		mg/Kg		108	75 - 125	
Arsenic	3.9	J	88.3	88.4		mg/Kg		96	75 - 125	
Barium	24		88.3	106		mg/Kg		93	75 - 125	
Cadmium	13		88.2	101		mg/Kg		100	75 - 125	
Chromium	20		88.3	116		mg/Kg		109	75 - 125	
Lead	41		88.3	122		mg/Kg		91	75 - 125	
Selenium	1.2	U	44.1	42.3		mg/Kg		96	75 - 125	

Lab Sample ID: 160-18646-7 MSD

Matrix: Solid

Analysis Batch: 266740

Client Sample ID: YMTFA53EJ

Prep Type: Total/NA

Prep Batch: 265985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Silver	1.2	U	19.0	20.7		mg/Kg		109	75 - 125	8	30
Arsenic	3.9	J	95.2	95.0		mg/Kg		96	75 - 125	7	30
Barium	24		95.2	151	N *	mg/Kg		134	75 - 125	35	30
Cadmium	13		95.1	133	N	mg/Kg		126	75 - 125	27	30
Chromium	20		95.2	134		mg/Kg		120	75 - 125	14	30
Lead	41		95.2	165	N	mg/Kg		130	75 - 125	30	30
Selenium	1.2	U	47.6	45.3		mg/Kg		95	75 - 125	7	30

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 160-266502/1-A

Matrix: Solid

Analysis Batch: 267073

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0099	U	0.030	0.0099	mg/Kg		08/25/16 10:44	08/26/16 12:46	1

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: LCSSRM 160-266502/2-A ^10X

Matrix: Solid

Analysis Batch: 267073

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266502

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec.
Mercury	9.36	7.96		mg/Kg	85.1	51.3 - 148.5	

Lab Sample ID: 160-18704-A-1-B MS

Matrix: Solid

Analysis Batch: 267073

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 266502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
Mercury	0.011	U	0.769	0.769		mg/Kg	100	80 - 120	

Lab Sample ID: 160-18704-A-1-C MSD

Matrix: Solid

Analysis Batch: 267073

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 266502

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD
Mercury	0.011	U	0.761	0.769		mg/Kg	101	80 - 120		0 30

Method: SR-03-RC - Total Beta Strontium (GFPC)

Lab Sample ID: MB 160-266721/1-A

Matrix: Solid

Analysis Batch: 267344

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266721

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium 89/90	-0.06641	U	0.125	0.125	3.00	0.234	pCi/g	08/25/16 18:10	08/30/16 21:42	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	84.9		40 - 110	08/25/16 18:10	08/30/16 21:42	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266721

Lab Sample ID: LCS 160-266721/2-A

Matrix: Solid

Analysis Batch: 267344

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits	Dil Fac
Strontium 89/90	8.60	6.856	0.635	3.00	0.204	pCi/g	80	75 - 125		1

Carrier	LCS %Yield	LCS Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.4		40 - 110	08/25/16 18:10	08/30/16 21:42	1

Lab Sample ID: 160-18646-A-4-J DU

Matrix: Solid

Analysis Batch: 267477

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 266721

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
Strontium 89/90	0.129	U	0.03299	U	0.108	3.00	0.189	pCi/g	0.42	1

TestAmerica St. Louis

QC Sample Results

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: SR-03-RC - Total Beta Strontium (GFPC) (Continued)

Lab Sample ID: 160-18646-A-4-J DU

Matrix: Solid

Analysis Batch: 267477

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 266721

Carrier	DU	DU	%Yield	Qualifier	Limits
Sr Carrier	83.5				40 - 110

Method: TC-02-RC - Technetium-99 (LSC)

Lab Sample ID: MB 160-266075/1-A

Matrix: Solid

Analysis Batch: 266901

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 266075

Analyte	MB		MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Result	Qualifier								
Technetium-99	-0.01997	U			0.193	0.193	1.00	0.331	pCi/g	08/23/16 10:56	08/26/16 21:19	1
Tracer	MB	MB	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Tc-99m	96.7				30 - 110					08/23/16 10:56	08/26/16 21:19	1

Lab Sample ID: LCS 160-266075/2-A

Matrix: Solid

Analysis Batch: 266901

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 266075

Analyte	Spike		LCS Result	LCS Qual	Total Uncert. (2σ+/-)		RL	MDC	Unit	%Rec	Limits
	Added	Result			(2σ+/-)	3.00					
Technetium-99		29.0	30.09			1.00	0.354	pCi/g	104	75 - 125	
Tracer	LCS	LCS	%Yield	Qualifier	Limits						
Tc-99m	89.7				30 - 110						

Lab Sample ID: 160-18632-A-1-G DU

Matrix: Solid

Analysis Batch: 266901

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 266075

Analyte	Sample		DU Result	DU Qual	Total Uncert. (2σ+/-)		RL	MDC	Unit	RER	Limit
	Result	Qual			(2σ+/-)	0.231					
Technetium-99	0.119	U			-0.02995	U	1.00	0.399	pCi/g	0.31	1
Tracer	DU	DU	%Yield	Qualifier	Limits						
Tc-99m	95.6				30 - 110						

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

GC Semi VOA

ISM Prep Batch: 265251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18632-A-1-K MS	Matrix Spike	Total/NA	Solid	Increment, Prep	
160-18632-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	Increment, Prep	

Prep Batch: 266347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	3550C	
160-18646-8	YMTFA52EJ	Total/NA	Solid	3550C	
MB 160-266347/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-266347/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-18632-A-1-K MS	Matrix Spike	Total/NA	Solid	3550C	265251
160-18632-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	265251

Analysis Batch: 266473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-266347/1-A	Method Blank	Total/NA	Solid	8082A	266347
LCS 160-266347/2-A	Lab Control Sample	Total/NA	Solid	8082A	266347
160-18632-A-1-K MS	Matrix Spike	Total/NA	Solid	8082A	266347
160-18632-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8082A	266347

Analysis Batch: 267639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	8082A	266347
160-18646-8	YMTFA52EJ	Total/NA	Solid	8082A	266347
MB 160-266347/1-A	Method Blank	Total/NA	Solid	8082A	266347
LCS 160-266347/2-A	Lab Control Sample	Total/NA	Solid	8082A	266347

Metals

Prep Batch: 265985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	3050B	
160-18646-8	YMTFA52EJ	Total/NA	Solid	3050B	
MB 160-265985/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 160-265985/2-A	Lab Control Sample	Total/NA	Solid	3050B	
160-18646-7 MS	YMTFA53EJ	Total/NA	Solid	3050B	
160-18646-7 MSD	YMTFA53EJ	Total/NA	Solid	3050B	

Prep Batch: 266502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	7471B	
160-18646-8	YMTFA52EJ	Total/NA	Solid	7471B	
MB 160-266502/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 160-266502/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	
160-18704-A-1-B MS	Matrix Spike	Total/NA	Solid	7471B	
160-18704-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471B	

Analysis Batch: 266740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	6010C	265985
160-18646-8	YMTFA52EJ	Total/NA	Solid	6010C	265985

TestAmerica St. Louis

QC Association Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Metals (Continued)

Analysis Batch: 266740 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-265985/1-A	Method Blank	Total/NA	Solid	6010C	265985
LCSSRM 160-265985/2-A	Lab Control Sample	Total/NA	Solid	6010C	265985
160-18646-7 MS	YMTFA53EJ	Total/NA	Solid	6010C	265985
160-18646-7 MSD	YMTFA53EJ	Total/NA	Solid	6010C	265985

Analysis Batch: 267073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	7471B	266502
160-18646-8	YMTFA52EJ	Total/NA	Solid	7471B	266502
MB 160-266502/1-A	Method Blank	Total/NA	Solid	7471B	266502
LCSSRM 160-266502/2-A ^1	Lab Control Sample	Total/NA	Solid	7471B	266502
160-18704-A-1-B MS	Matrix Spike	Total/NA	Solid	7471B	266502
160-18704-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471B	266502

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ISM Prep Batch: 265348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-A-4-J DU	Duplicate	Total/NA	Solid	Increment, Prep	

Prep Batch: 266075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	Ext_Chrom_LSC	
160-18646-8	YMTFA52EJ	Total/NA	Solid	Ext_Chrom_LSC	
MB 160-266075/1-A	Method Blank	Total/NA	Solid	Ext_Chrom_LSC	
LCS 160-266075/2-A	Lab Control Sample	Total/NA	Solid	Ext_Chrom_LSC	
160-18632-A-1-G DU	Duplicate	Total/NA	Solid	Ext_Chrom_LSC	

Prep Batch: 266721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-18646-7	YMTFA53EJ	Total/NA	Solid	DPS-0	
160-18646-8	YMTFA52EJ	Total/NA	Solid	DPS-0	
MB 160-266721/1-A	Method Blank	Total/NA	Solid	DPS-0	
LCS 160-266721/2-A	Lab Control Sample	Total/NA	Solid	DPS-0	
160-18646-A-4-J DU	Duplicate	Total/NA	Solid	DPS-0	265348

TestAmerica St. Louis

Surrogate Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (23-146)
160-18632-A-1-K MS	Matrix Spike	94
160-18632-A-1-L MSD	Matrix Spike Duplicate	88
LCS 160-266347/2-A	Lab Control Sample	74
LCS 160-266347/2-A	Lab Control Sample	74
MB 160-266347/1-A	Method Blank	79
MB 160-266347/1-A	Method Blank	79

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (23-146)
160-18646-7	YMTFA53EJ	193 J S
160-18646-8	YMTFA52EJ	167 J S

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TestAmerica St. Louis

Tracer/Carrier Summary

Client: Alliant Corporation

Project/Site: ORNL Y-12 Outfall 200 Characterization

TestAmerica Job ID: 160-18646-2

Method: SR-03-RC - Total Beta Strontium (GFPC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Sr (C) (40-110)	
160-18646-7	YMTFA53EJ	85.0	
160-18646-8	YMTFA52EJ	77.3	
160-18646-A-4-J DU	Duplicate	83.5	
LCS 160-266721/2-A	Lab Control Sample	87.4	
MB 160-266721/1-A	Method Blank	84.9	

Tracer/Carrier Legend
Sr (C) = Sr Carrier

Method: TC-02-RC - Technetium-99 (LSC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Tc-99m (30-110)	
160-18632-A-1-G DU	Duplicate	95.6	
160-18646-7	YMTFA53EJ	89.3	
160-18646-8	YMTFA52EJ	106	
LCS 160-266075/2-A	Lab Control Sample	89.7	
MB 160-266075/1-A	Method Blank	96.7	

Tracer/Carrier Legend
Tc-99m = Tc-99m

TestAmerica St. Louis